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Application No. 10/749,269

REMARKS

Claims 1-18, 29-34, 47-50, 53 and 54 are pending. The allowance of claims 1-5, 7-14, 16-18, 29-33, 47, 49, and 53 is respectfully acknowledged. Claims 6, 15, 34, 48, 50, and 54 stand rejected. By this Amendment, claims 6, 15, and 34 are amended.

Allowance of Claims 1-5, 7-14, 16-18, 29-33, 47, 49, and 53

The Examiner indicated that claims 1-5, 7-14, 16-18, 29-33, 47, 49, and 53 are allowable over the prior art of record. The allowance of claims 1-5, 7-14, 16-18, 29-33, 47, 49, and 53 is appreciatively acknowledged. As noted by the Examiner, the prior art of record does not teach or suggest the charge transport material having the formula recited in the instant claims. Neither U.S. 6,964,833B2 (Tokarski '833) or U.S. 6,899,984B2 (Tokarski '984) disclose, teach or suggest that the Ar groups attached to nitrogen atoms in the hydrazone groups can be substituted with an epoxy group, as recited in the instant claims.

Objection to the Abstract

The Examiner objected to the abstract because it is not limited to a single paragraph. The abstract has been amended as requested. Reconsideration and withdrawal of the objection to the abstract are respectfully requested.

Objection to the Disclosure Due to Informalities*Use of Trademarks*

The Examiner objected to the disclosure due to the improper use of trademarks. The Examiner indicated that the trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. The specification has been amended to show the proper use of trademarks throughout the application. Therefore, reconsideration and withdrawal

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of the objection to the disclosure due to the improper use of trademarks are respectfully requested.

Branched or Linear $-(CH_2)_m-$

The Examiner objected to the specification, indicating that the specification discloses that the groups X_1 and X_2 can be groups having the formula $-(CH_2)_m-$, branched or linear, and alleging it is not clear how the $-(CH_2)_m-$ group can be branched.

The specification has been amended for clarification and to remove redundancy. The specification indicated that the groups X_1 and X_2 can be groups having the formula $-(CH_2)_m-$, where one or more of the methylene groups can be replaced by a CHR_4 group, or a CR_5R_6 group. Hence, branching of the methylene group is already provided. Reconsideration and withdrawal of the objection to the disclosure due to use of the term "branched" in association with the group $-(CH_2)_m-$ is respectfully requested.

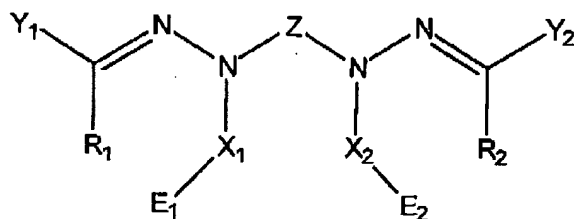
Objection Due to Lack of Antecedent Basis

The term "oxiranyl ring"

The Examiner objected to the specification as failing to provide proper antecedent basis for the claimed subject matter. The Examiner asserted that the recitation of " E_1 and E_2 are, each independently, an oxiranyl ring" in claims 4, 13, and 32 lacks antecedent basis in the specification. Further, the Examiner asserted that in the three particular charge transport compounds represented by formulas (2) to (4), the groups E_1 and E_2 are described specifically as "unsubstituted" oxiranyl rings, and the term "oxiranyl ring" in claims 4, 13, and 32 is broader than the disclosed unsubstituted oxiranyl ring because it includes substituted oxiranyl rings.

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The particular charge transport compounds represented by formulas (2) to (4) are described as “[s]pecific, **non-limiting examples**” (emphasis added) of suitable transport materials within the general



Formula (1)

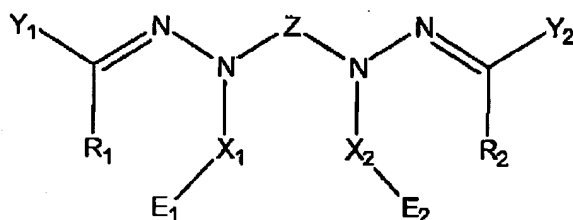
. In the provided *examples*, E₁ and E₂

are, each independently, an epoxy group, and an unsubstituted oxiranyl group. The specification further notes at page 12, lines 19-21, that “When referring to an epoxy group, the substituent cited will include any substitution that does not destroy the 3-membered ring structure of the epoxy group.” Hence, substitution of the oxiranyl ring is contemplated, thus providing antecedent basis for the oxiranyl ring recited in claims 4, 13, and 32. Further, the specification indicates at page 12, lines 1-24, that substitution is liberally allowed on the chemical groups to achieve various physical effects on the properties of the compounds. In addition, the term “group” is used to indicate that the generically recited chemical entity (e.g. alkyl group, epoxy group, arylamine group, etc.) may have any substituent thereon which is consistent with the bond structure of that group. Here, too, antecedent basis is provided for a substituted oxiranyl ring in the claims. Further, the specification has been amended to clarify that the oxiranyl ring can be substituted or unsubstituted. Support for the amendment to the specification can be found throughout the application and, for example, in the claims as originally filed. Based upon the above comments, reconsideration and withdrawal of the objection to the specification due to lack of antecedent basis for the term “oxiranyl ring” in the claims is respectfully requested.

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Lack of Antecedent Basis for the Formula Recited in Claims 5, 14, and 33

The Examiner objected to the specification as failing to provide proper antecedent basis for the claimed subject matter. The Examiner asserted that the formula recited in claims 5, 14, and 33 lacks antecedent basis in the specification because the formula recited in the claims is broader than the three disclosed particular compounds because the formula of the claims includes compounds where the groups Y_1 and Y_2 are not the groups exemplified in formulas (2) through (4), such as the arylamine, diphenylmethanamine. The particular charge transport compounds represented by formulas (2) to (4) are described as “[s]pecific, **non-limiting examples**” (emphasis added) of suitable transport materials within the general



Formula (1)

In the provided *examples*, Y_1 and Y_2 are, each independently, an arylamine group. The specification further notes at page 11, lines 28-30, that “An arylamine group includes an (N,N-disubstituted)arylamine group (e.g., triarylamine group, alkyl diarylamine group, and dialkylarylamine group), julolodiny group, and a carbazolyl group.” Hence, arylamines other than the arylamines shown in the formulas (2) through (4) are contemplated and antecedent basis for Y_1 and Y_2 being, each independently, an arylamine group as recited in claims 5, 14, and 33 is provided. The specification throughout also defines Y_1 and Y_2 as being, each independently, an arylamine, for example at page 10, line 12 and page 24, line 1. Further, the specification indicates at page 12, lines 1-24, that substitution is liberally allowed on the chemical groups to affect various physical effects on the properties of the compounds. In addition, the term “group” is used to indicate that the generically recited chemical entity (e.g. alkyl group, epoxy group, arylamine group, etc.) may have any substituent thereon which is consistent with the bond structure of that group. Further, non-limiting examples

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of aryl groups are provided, such as phenyl, naphthyl, benzyl, or tolyl group. Here, too, antecedent basis is provided for Y_1 and Y_2 being, each independently, an arylamine group, in the claims. Based upon the above comments, reconsideration and withdrawal of the objection to the specification due to lack of antecedent basis for Y_1 and Y_2 being, each independently, an arylamine group as recited in claims 5, 14, and 33, is respectfully requested.

Rejection Under 35 U.S.C. §112

The Examiner rejected claims 6, 15, and 34 as indefinite because it is not clear how the $-(CH_2)_m-$ group can be branched. The claims have been amended for clarification and to remove redundancy. The claims indicated that the groups X_1 and X_2 can be groups having the formula $-(CH_2)_m-$, where one or more of the methylene groups can be replaced by a CHR_4 group, or a CR_5R_6 group. Hence, branching of the methylene group is already provided. Reconsideration and withdrawal of the rejection of claims 6, 15, and 34 as indefinite is respectfully requested.

Rejection Under 35 U.S.C. §112, Second Paragraph

The Examiner rejected claims 48, 50, and 54 asserting that the claims contain subject matter that was not described in the specification in such a way as to convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. Further, the Examiner asserted that the specification does not provide an adequate written description of the Z group as recited in claims 48, 50 and 54. More specifically, the Examiner asserted that the phrase "a linking group that comprises S, O, N..." recited in the instant claims is broader than the originally disclosed linking group.

The linking group Z is described throughout the specification as comprising an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group, for example, at page 10,

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lines 23-24. The linking groups in claims 48, 50 and 54 are aromatic groups. Aromatic groups are described as aromatic heterocyclic groups which contain at least one heteroatom in the $4n+2$ π -electron ring or an aryl group which does not contain a heteroatom in the $4n+2$ π -electron ring. The linking group Z in the instant claims complies with this description of an aromatic group. The specification further provides *non-limiting examples* of the aryl group, at page 11, lines 20-27. Since the enumerated groups are clearly provided as *examples*, other aromatic groups complying with the above description are contemplated. Hence, the description of Z in the instant claims conforms to the description provided in the specification. The specification at page 11, lines 20-27 further indicates that "The aryl group may also include any combination of the above aryl groups bonded together either by a bond (as in a biphenyl group) or by a linking group (as in stilbenyl, diphenyl sulfone, an arylamine group). Hence, a linking group is contemplated and the provided linking groups are shown as *examples*, thus the wording "as in a stilbenyl..." is used. For example, since an arylamine group is mentioned, a nitrogen can be the "linking group". The non-limiting language of the specification ("by a linking group (*as in* [for example])...) allows for other linking groups. The specification further clarifies that an aliphatic group or an aromatic group within a linking group *may* comprise at least one heteroatom such as O, S, and N. This language does not limit the use of heteroatoms as linking groups, but indicates that it is allowable for an aliphatic group or an aromatic group within a linking group may include a heteroatom.

Because the specification, for example, at page 10, line 9 – page 11, line 27, indicates that the aryl group may include a combination of aryl groups bonded together by a bond or a linking group, and the description of the Z group in claims 48, 50, and 54 complies with this description, reconsideration and withdrawal of the rejection of claims 48, 50 and 54 under 35 U.S.C. §112, second paragraph are respectfully requested.

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In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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